

ABSTRACT OF THE DISCLOSURE

According to a CDMA communication system of the invention,  
a transmitter comprises means for preparing a composite set of  
5 ZCCZ spreading sequences composed of layered sequence groups  
in which a periodic cross correlation function between an  
arbitrary pair of spreading sequences for a certain shift region  
around the 0 shift, means for creating an expanded sequence by  
adding guard sequences to both sides of a core-sequence that  
10 is an original ZCCZ spreading sequence, and means for creating  
a transmission base band data symbol by multiplying a  
transmission data by said expanded sequence, and a receiver  
comprises means for despreading a received data symbol in  
correlation with said ZCCZ spreading sequence used by a  
15 transmitter of a desired station to produce a soft output, and  
making hard decision on the soft output.